INDEX

BENJAMIN, T. BROOKE. The threefold classification of unstable disturbances in flexible surfaces bounding inviscid flows, 436

BOEDEKER, LAURENCE R. and COVERT, EUGENE E. Measurements of helical flow of a strong electrolyte with and without a transverse magnetic field, 197

CHEN, W. S. *See* KISTLER

COVERT, EUGENE E. *See* BOEDEKER

DANCKWERTS, P. V. and WILSON, R. A. M. Flow-visualization by means of a time-reaction, 412

DONALDSON, C. DUP. *See* SULLIVAN

DOUGHERTY, J. P. The conductivity of a partially ionized gas in alternating electric fields, 126

EAST, L. F. *See* MAULL

GIBSON, C. H. and SCHWARZ, W. H. Detection of conductivity fluctuations in a turbulent flow field, 357

GIBSON, C. H. and SCHWARZ, W. H. The universal equilibrium spectra of turbulent velocity and scalar fields, 365

GREWAL, M. S. and TALBOT, L. Shock wave structure in a partially ionized gas, 573

HARLEMAN, D. R. F. and RUMER, R. R. Longitudinal and lateral dispersion in an isotropic porous medium, 385

HAYES, W. D. *See* SULLIVAN

HELLIWELL, J. B. Magnetogasdynamic deflagration and detonation waves with ionization, 243

HOFFMANN, E. R. and JOUBERT, P. N. Turbulent line vortices, 395

HORLOCK, J. H. Some two-dimensional magneto-fluid-dynamic flows at low magnetic Reynolds number, 17

HOWARD, L. N. Neutral curves and stability boundaries in stratified flow, 333

JOUBERT, P. N. *See* HOFFMANN

JUKES, J. D. On the Rayleigh–Taylor problem in magnetohydrodynamics with finite resistivity, 177

KATZ, E. J. A ray theory for wave propagation in a non-uniform medium, 343

KENNEDY, JOHN F. The mechanics of dunes and antidunes in erodible-bed channels, 521

KESTIN, J. *See* SUTERA

KHOSLA, P. K. and MURGAI, M. P. A study of the combined effect of thermal radiative transfer and rotation on the gravitational stability of a hot fluid, 97

KISTLER, A. L. and CHEN, W. S. A fluctuating pressure field in a supersonic turbulent boundary layer, 41

LONGUET-HIGGINS, M. S. The generation of capillary waves by steep gravity waves, 138

MAEDER, P. F. *See* SUTERA

MALLICK, D. D. Instability of a surface of discontinuity of velocity in a parallel uniform magnetic field, 187

MAULL, D. J. and EAST, L. F. Three-dimensional flow in cavities, 620

MEYER, R. E. *See* SHEN

MILES, JOHN W. On the stability of heterogeneous shear flow. Part 2, 209

MOORE, D. W. The boundary layer on a spherical gas bubble, 161

MURGAI, M. P. *See* KHOSLA

OGILVIE, T. FRANCIS. First- and second-order forces on a cylinder submerged under a free surface, 451

OGURA, YOSHIMITSU. A consequence of the zero-fourth-cumulant approximation in the decay of isotropic turbulence, 33

PHILLIPS, O. M. On the attenuation of long gravity waves by short breaking waves, 321

RUMER, R. R. *See* HARLEMAN

SAFFMAN, P. G. On the fine-scale structure of vector fields convected by a turbulent fluid, 545

SCHWARTZ, W. H. *See* GIBSON

SEN, A. R. Surface waves due to blasts on and above liquids, 65

SHEN, M. C. and MEYER, R. E. Climb of a bore on a beach. Part 2. Non-uniform beach slope, 108

SHEN, M. C. and MEYER, R. E. Climb of a bore on a beach. Part 3. Run-up, 113

SULLIVAN, R. D., DONALDSON, C. DUP. and HAYES, W. D. Linearized pressure distributions with strong supersonic entropy layers, 481

SUTERA, S. P., MAEDER, P. F. and KESTIN, J. On the sensitivity of heat transfer in the stagnation-point boundary layer to stream-free vorticity, 497

TALBOT, L. *See* GREWAL

TAYLOR, G. I. Cavitation of a viscous fluid in narrow passages, 595

THOMAS, R. H. and WALTERS, K. On the flow of an elastico-viscous liquid in a curved pipe under a pressure gradient, 228

TRITTON, D. J. The use of a fibre anemometer in turbulent flows, 269

TRITTON, D. J. Turbulent free convection above a heated plate inclined at a small angle to the horizontal, 282

TRITTON, D. J. Transition to turbulence in the free convection boundary layers on an inclined heated plate, 417

TURNER, J. S. The motion of buoyant elements in turbulent surroundings, 1

VLASES, G. C. Experiments in a cylindrical magnetic shock tube, 82

WALTERS, K. *See* THOMAS

WILLIAMS, W. E. Magnetohydrodynamic flow in a rectangular tube at high Hartmann number, 262

WILSON, R. A. M. *See* DANCKWERTS

REVIEWS

Vorlesungen über theoretische Gasdynamik, 160

Principles of Classical Mechanics and Field Theory, 313

An Elementary Treatise on the Mechanics of Fluids, 318

Atmospheric Diffusion, 319

The Theory of Electromagnetic Flow-Measurement, 473

Theory of Ion Flow Dynamics, 474

Introduction to Plasma Physics, 475

Proceedings of the 10th International Congress of Applied Mechanics, 477

Les Principes de l'Analyse Dimensionelle. Similarity and Dimensional Methods in Mechanics, 633

Mechanics of Solids and Fluids. Fluid Dynamics, 635

Journal of the Atmospheric Sciences. Journal de Mécanique, 638

MEMORIES OF KÁRMÁN, 478

CONTENTS TO VOLUME 16

PART 1 MAY 1963

The motion of buoyant elements in turbulent surroundings. J. S. TURNER *page* 1

Some two-dimensional magneto-fluid-dynamic flows at low magnetic Reynolds number. J. H. HORLOCK 17

A consequence of the zero-fourth-cumulant approximation in the decay of isotropic turbulence. YOSHIMITSU OGURA 33

A fluctuating pressure field in a supersonic turbulent boundary layer. A. L. KISTLER and W. S. CHEN 41

Surface waves due to blasts on and above liquids. A. R. SEN 65

Experiments in a cylindrical magnetic shock tube. G. C. VLASES 82

A study of the combined effect of thermal radiative transfer and rotation on the gravitational stability of a hot fluid. P. K. KHOSLA and M. P. MURGAI 97

Climb of a bore on a beach. Part 2. Non-uniform beach slope. M. C. SHEN and R. E. MEYER 108

Climb of a bore on a beach. Part 3. Run-up. M. C. SHEN and R. E. MEYER 113

The conductivity of a partially ionized gas in alternating electric fields. J. P. DOUGHERTY 126

The generation of capillary waves by steep gravity waves. M. S. LONGUET-HIGGINS 138

REVIEWS

Vorlesungen über theoretische Gasdynamik 160

PART 2 JUNE 1963

The boundary layer on a spherical gas bubble. D. W. MOORE 161

On the Rayleigh–Taylor problem in magnetohydrodynamics with finite resistivity. J. D. JUKES 177

Instability of a surface of discontinuity of velocity in a parallel uniform magnetic field. D. D. MALLICK 187

Measurements of helical flow of a strong electrolyte with and without a transverse magnetic field. LAURENCE R. BOEDEKER and EUGENE E. COVERT 197

On the stability of heterogeneous shear flows. Part 2. JOHN W. MILES 209

On the flow of an elastico-viscous liquid in a curved pipe under a pressure gradient. R. H. THOMAS and K. WALTERS 228

Magnetogasdynamic deflagration and detonation waves with ionization. J. B. Helliwell *page* 243

Magnetohydrodynamic flow in a rectangular tube at high Hartmann number. W. E. Williams 262

The use of a fibre anemometer in turbulent flows. D. J. Tritton 269

Turbulent free convection above a heated plate inclined at a small angle to the horizontal. D. J. Tritton 282

Reviews

Principles of Classical Mechanics and Field Theory 313

An Elementary Treatise on the Mechanics of Fluids 318

Atmospheric Diffusion 319

Part 3 July 1963

On the attenuation of long gravity waves by short breaking waves. O. M. Phillips 321

Neutral curves and stability boundaries in stratified flow. L. N. Howard 333

A ray theory for wave propagation in a non-uniform medium. E. J. Katz 343

Detection of conductivity fluctuations in a turbulent flow field. C. H. Gibson and W. H. Schwarz 357

The universal equilibrium spectra of turbulent velocity and scalar fields. C. H. Gibson and W. H. Schwarz 365

Longitudinal and lateral dispersion in an isotropic porous medium. D. R. F. Harleman and R. R. Rumer 385

Turbulent line vortices. E. R. Hoffmann and P. N. Joubert 395

Flow-visualization by means of a time-reaction. P. V. Danckwerts and R. A. M. Wilson 412

Transition to turbulence in the free convection boundary layers on an inclined heated plate. D. J. Tritton 417

The threefold classification of unstable disturbances in flexible surfaces bounding inviscid flows. T. Brooke Benjamin 436

First- and second-order forces on a cylinder submerged under a free surface. T. Francis Ogilvie 451

Reviews

The Theory of Electromagnetic Flow-Measurement 473

Theory of Ion Flow Dynamics 474

Introduction to Plasma Physics 475

Proceedings of the 10th International Congress of Applied Mechanics 477

Memories of Kármán 478

PART 4 AUGUST 1963

Linearized pressure distributions with strong supersonic entropy layers. R. D. SULLIVAN, C. DUP. DONALDSON and W. D. HAYES *page* 481

On the sensitivity of heat transfer in the stagnation-point boundary layer to free-stream vorticity. S. P. SUTERA, P. F. MAEDER and J. KESTIN 497

The mechanics of dunes and antidunes in erodible-bed channels. JOHN F. KENNEDY 521

On the fine-scale structure of vector fields convected by a turbulent fluid. P. G. SAFFMAN 545

Shock wave structure in a partially ionized gas. M. S. GREWAL and L. TALBOT 573

Cavitation of a viscous fluid in narrow passages. G. I. TAYLOR 595

Three-dimensional flow in cavities. D. J. MAULL and L. F. EAST 620

REVIEWS

Les Principes de l'Analyse Dimensionelle. Similarity and Dimensional Methods in Mechanics 633

Mechanics of Solids and Fluids. Fluid Dynamics 635

Journal of the Atmospheric Sciences. Journal de Mécanique 638

INDEX TO VOLUME 16 639